

I claim:

1. A method used for detecting the clamping force of a processed object, said method detecting the clamping force of a processed object tightly clamped between several pivotal rods, said method comprises the steps of:
 - 5 (a) setting the spacing between said pivotal rods to be commensurate with a longitudinal length of said processed object;
 - (b) placing a basis component having a pressure detection component between said pivotal rods with said pivotal rods closely leaning against said basis component, electrically connecting a detection unit to said pressure detection component;
 - 10 (c) detecting variation of electric properties of said pressure detection component caused by stress strain and then providing electric signal messages using said detection unit; and
 - (d) utilizing said electric signal messages to adjust the spacing between said pivotal rods so as to adjust the clamping force of said basis component having said pressure detection component.
- 15 2. The method used for detecting the clamping force of a processed object as claimed in claim 1, wherein said step (c) further comprises a step of electrically connecting a display unit to said detection unit to display said electric signal messages of said detection unit.
- 20 3. The method used for detecting the clamping force of a processed object as claimed in claim 2, wherein said display unit can be lamps, a digital display or an analog indicator.
4. The method used for detecting the clamping force of a processed object as claimed in claim 1, wherein said pressure detection component is made of

- piezoelectric material and disposed on said basis component, and said detection unit detects an electric potential difference caused by stress strain of said piezoelectric material.
5. The method used for detecting the clamping force of a processed object as claimed in claim 4, wherein said piezoelectric material is quartz, PbZrTiO₃, BaTiO₃ or ZnO.
6. The method used for detecting the clamping force of a processed object as claimed in claim 1, wherein said pressure detection component is annularly disposed on said basis component, and said pressure detection component contacts said pivotal rods.
- 10 7. The method used for detecting the clamping force of a processed object as claimed in claim 1, wherein said pressure detection component is placed near said pivotal rods and at two sides of said basis component, and contacts said pivotal rods.
- 15 8. The method used for detecting the clamping force of a processed object as claimed in claim 1, wherein said pressure detection component is made of piezo-resistive material, and said detection unit detects resistance variation caused by stress strain of said piezo-resistive material.
9. The method used for detecting the clamping force of a processed object as claimed in claim 1, wherein said piezo-resistive material is of a membranous shape and disposed at a side face of said basis component.
- 20 10. The method used for detecting the clamping force of a processed object as claimed in claim 1, wherein said basis component can be made of silicon material.
- 25 11. A device used for detecting the clamping force of a processed object, said

device detecting the clamping force of a processed object tightly clamped between several pivotal rods, said device comprising:

a basis component;

a pressure detection component disposed on said basis component; and

5 a detection unit electrically connected to said pressure detection component to provide electric signal messages;

whereby said basis component having said pressure detection component is disposed between said pivotal rods to detect the clamping force.

12. The device used for detecting the clamping force of a processed object as

10 claimed in claim 11 further comprising a display unit electrically connected to said detection unit to display said electric signal messages of said detection unit.

13. The device used for detecting the clamping force of a processed object as claimed in claim 12, wherein said display unit can be lamps, a digital display

15 or an analog indicator.

14. The device used for detecting the clamping force of a processed object as claimed in claim 11, wherein said pressure detection component is made of piezoelectric material, and said detection unit detects an electric potential difference caused by stress strain of said piezoelectric material.

20 15. The device used for detecting the clamping force of a processed object as claimed in claim 11, wherein said piezoelectric material is of a membranous shape and disposed at a side face of said basis component.

16. The device used for detecting the clamping force of a processed object as claimed in claim 11, wherein said piezoelectric material is quartz, $PbZrTiO_3$,

25 $BaTiO_3$ or ZnO .

17. The device used for detecting the clamping force of a processed object as claimed in claim 11, wherein said pressure detection component is annularly disposed on said basis component, and said pressure detection component contacts said pivotal rods.
- 5 18. The device used for detecting the clamping force of a processed object as claimed in claim 11, wherein said pressure detection component is placed near said pivotal rods and at two sides of said basis component, and contacts said pivotal rods.
19. The device used for detecting the clamping force of a processed object as
10 claimed in claim 11, wherein said pressure detection component is made of piezo-resistive material, and said detection unit detects resistance variation caused by stress strain of said piezo-resistive material.
20. The device used for detecting the clamping force of a processed object as
claimed in claim 19, wherein said piezo-resistive material is of a
15 membranous shape and disposed at a side face of said basis component.
21. The device used for detecting the clamping force of a processed object as
claimed in claim 11, wherein said basis component can be made of silicon
material.
22. A pressure detection device used for detecting the wafer-clamping force of
20 a wafer cleaning and processing apparatus, said device detecting the
clamping force of a wafer tightly clamped between several pivotal rods, said
device comprising:
a basis component;
a pressure detection component disposed on said basis component; and
25 a detection unit electrically connected to said pressure detection component

- to provide electric signal messages;
whereby said basis component having said pressure detection component is disposed between said pivotal rods to detect the clamping force.
23. The pressure detection device used for detecting the wafer-clamping force
5 of a wafer cleaning and processing apparatus as claimed in claim 22 further comprising a display unit electrically connected to said detection unit to display said electric signal messages of said detection unit.
24. The pressure detection device used for detecting the wafer-clamping force
of a wafer cleaning and processing apparatus as claimed in claim 23, wherein
10 said display unit can be lamps, a digital display or an analog indicator.
25. The pressure detection device used for detecting the wafer-clamping force
of a wafer cleaning and processing apparatus as claimed in claim 22, wherein
said pressure detection component is made of piezoelectric material, and said
detection unit detects an electric potential difference caused by stress strain
15 of said piezoelectric material.
26. The pressure detection device used for detecting the wafer-clamping force
of a wafer cleaning and processing apparatus as claimed in claim 25, wherein
said piezoelectric material is of a membranous shape and disposed at a side
face of said basis component.
- 20 27. The pressure detection device used for detecting the wafer-clamping force
of a wafer cleaning and processing apparatus as claimed in claim 25, wherein
said piezoelectric material is quartz, $PbZrTiO_3$, $BaTiO_3$ or ZnO .
28. The pressure detection device used for detecting the wafer-clamping force
of a wafer cleaning and processing apparatus as claimed in claim 22, wherein
25 said pressure detection component is annularly disposed on said basis

component, and said pressure detection component contacts said pivotal rods.

29. The pressure detection device used for detecting the wafer-clamping force of a wafer cleaning and processing apparatus as claimed in claim 22, wherein
5 said pressure detection component is placed near said pivotal rods and at two sides of said basis component, and contacts said pivotal rods.

30. The pressure detection device used for detecting the wafer-clamping force of a wafer cleaning and processing apparatus as claimed in claim 22, wherein
10 said pressure detection component is made of piezo-resistive material, and
 said detection unit detects resistance variation caused by stress strain of said piezo-resistive material.

31. The pressure detection device used for detecting the wafer-clamping force of a wafer cleaning and processing apparatus as claimed in claim 30, wherein
15 said piezo-resistive material is of a membranous shape and disposed at a side face of said basis component.

32. The pressure detection device used for detecting the wafer-clamping force of a wafer cleaning and processing apparatus as claimed in claim 22, wherein
 said basis component can be made of silicon material.